CENTERS FOR DISEASE CONTROL

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

September 23, 1988/Vol. 37/No. 37

Current Trends

Number of Sex Partners and Potential Risk of Sexual Exposure to Human Immunodeficiency Virus

Human immunodeficiency virus type 1 (HIV-1) and other sexually transmitted diseases (STDs) are spread from infected persons to their sex partners during unprotected sexual exposures (*1*). The Public Health Service estimates that between 945,000 and 1,410,000 Americans have been infected with HIV-1 (*2*), but the number of Americans at risk because of unprotected sexual exposures is unknown. Estimates of current levels of sexual activity are based in part on a survey of sexual behavior conducted 40 years ago (*3*).

The National Opinion Research Center (NORC) has been conducting an annual General Social Survey (GSS) on important social issues since 1972 (*4*). From February 14 to April 25, 1988, face-to-face interviews were conducted with a probability sample of adults (≥18 years of age) residing in U.S. households. At the conclusion of the GSS interview, NORC interviewers asked respondents to complete and return in a sealed envelope a one-page self-administered questionnaire that included the following questions:

- **How many sex partners have you had in the last 12 months?**
- **Was one of the partners your husband or wife or regular sex partner?**
- **If you had other partners, please indicate all categories that apply to them—close personal friend; neighbor, co-worker, or long-term acquaintance; casual date or pick-up; person you paid or [who] paid you for sex; other.**
- **Have your sex partners in the last 12 months been exclusively male, both male and female, or exclusively female?**

The GSS response rate in 1988 was 77.3%; 93.9% of the 1481 respondents answered the question about number of sex partners in the past 12 months (Table 1). Overall, 21.5% said they had no sex partner in the past 12 months, 59.6% said one, 10.6% said two to four, 2.2% said five or more, and 6.1% did not answer the question. Six percent of the 638 men and 1.2% of the 843 women indicated that at least one of their sex partners in the past 12 months was a "casual date or pick-up." Four (0.6%) men and no women reported that at least one of their partners was a "person you paid or [who] paid you for sex."

HIV — Continued

TABLE 1. Percentage of respondents reporting numbers of sex partners in the past 12 months, by marital status, sex, and age group of respondent — General Social Survey (GSS), 1988

	All respondents					Married spouse in the household				
	Men (%)					Men (%)				
No. partners	18–29 (n=165)	30–44 (n=231)	45–60 (n=110)	≥61 (n=132)	Total (n=638)	18–29 (n=50)	30–44 (n=156)	45–60 (n=79)	≥61 (n=93)	Total (n=378)
0	9.7	8.2	16.4	30.3	14.6	0	3.8	8.9	20.4	8.5
1	46.1	71.0	64.6	60.6	61.3	80.0	87.2	78.5	74.2	81.2
2	9.1	5.6	6.4	0.8	5.6	2.0	2.6	3.8	0	2.1
3	9.7	3.9	1.8	2.3	4.7	4.0	0	1.3	1.1	1.1
4	6.1	2.6	0.9	2.3	3.1	2.0	0	0	1.1	0.5
5–10	8.5	1.3	0.9	0	2.8	0	0.6	1.3	0	0.5
>10	3.0	0.9	1.8	0	1.4	0	0	1.3	0	0.3
No answer	7.9	6.5	7.3	3.8	6.4	12.0	5.8	5.1	3.2	5.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Women (%)					Women (%)				
No. partners	18–29 (n=191)	30–44 (n=252)	45–60 (n=151)	≥61 (n=245)	Total (n=843)*	18–29 (n=84)	30–44 (n=143)	45–60 (n=82)	≥61 (n=98)	Total (n=410)
0	7.3	7.1	28.5	60.8	26.7	0	3.5	7.3	24.5	8.8
1	66.0	77.8	62.9	29.8	58.2	89.3	91.6	85.4	65.3	82.9
2	13.1	5.2	2.6	0.8	5.2	3.6	0	0	1.0	1.0
3	4.2	4.8	0.7	0	2.5	2.4	0	0	0	0.5
4	2.1	0.8	0	0	0.7	0	0	0	0	0
5–10	1.0	0.4	0	0.4	0.5	0	0	0	1.0	0.2
>10	0	0.4	0.7	0	0.2	0	0	1.2	0	0.2
No answer	6.3	3.6	4.6	8.2	5.9	4.8	4.9	6.1	8.2	6.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

	No longer married					Never married				
	Men (%)					Men (%)				
No. partners	18–29 (n<30)†	30–44 (n=40)	45–60 (n<30)†	≥61 (n=30)	Total (n=101)	18–29 (n=108)	30–44 (n=35)	45–60 (n<30)†	≥61 (n<30)†	Total (n=159)
0		5.0		43.3	21.8	14.8	31.4			24.5
1		42.5		36.7	40.6	29.6	31.4			27.0
2		17.5		3.3	10.9	13.0	5.7			10.7
3		15.0		3.3	8.9	12.0	8.6			10.7
4		7.5		6.7	6.9	7.4	8.6			6.9
5–10		5.0		0	2.0	13.0	0			8.8
>10		2.5		0	1.0	4.6	2.9			4.4
No answer		5.0		6.7	7.9	5.6	11.4			6.9
Total		100.0		100.0	100.0	100.0	100.0			100.0
	Women (%)					Women (%)				
No. partners	18–29 (n<30)†	30–44 (n=80)	45–60 (n=61)	≥61 (n=136)	Total (n=294)	18–29 (n=90)	30–44 (n<30)†	45–60 (n<30)†	≥61 (n<30)†	Total (n=139)
0		8.8	52.5	84.6	52.7	14.4				24.5
1		58.8	36.1	6.6	29.9	45.6				45.3
2		15.0	6.6	0.7	6.8	21.1				14.4
3		12.5	1.6	0	4.4	4.4				4.3
4		1.2	0	0	0.3	4.4				3.6
5–10		1.2	0	0	0.3	2.2				1.4
>10		1.2	0	0	0.3	0				0
No answer		1.2	3.3	8.1	5.1	7.8				6.5
Total		100.0	100.0	100.0	100.0	100.0				100.0

*Total includes all age groups (four women did not report their ages).
†Responses for categories with <30 respondents are not shown.

HIV — Continued

Of the 504 men who reported having one or more sex partners within the past 12 months,* 14 (2.8%) reported their partners were exclusively male, two (0.4%) indicated their partners included males and females, 460 (91.3%) indicated their partners were exclusively female, and 28 (5.6%) did not answer this question. Of the 14 men who said they had sexual intercourse with male partners exclusively, 10 reported one partner in the past 12 months, two reported three partners, one reported four partners, and one reported between 21 and 100 partners. Six of the 16 men with homosexual exposures said they were married at the time of interview, eight had never married, and two had been married previously. Of the 567 women who reported having one or more partners within the past 12 months, one (0.2%) reported her partners were exclusively female, 541 (95.4%) reported their partners were exclusively male, and 25 (4.4%) did not answer this question.

Reported by: RT Michael, PhD, EO Laumann, PhD, JH Gagnon, PhD, TW Smith, PhD, National Opinion Research Center, Univ of Chicago, Illinois. AIDS Program, Center for Infectious Diseases, CDC.

Editorial Note: Many epidemiologic models of the sexual transmission of HIV-1 (*5*) and other STDs (*6*) require estimates of the average rate of acquiring new sex partners per unit of time. These estimates can be obtained from reliable data on the numbers of sex partners reported by men and women classified by age and marital status. The distributions reported in the GSS suggest that the vast majority of the U.S. population has no or only one sex partner within a year; thus, most Americans appear to be at relatively low risk of infection with HIV-1 and other STDs from sexual exposures.

However, a sizeable percentage of young, never-married men report more than 10 partners in the past 12 months: 4.6% of those aged 18–29 years and 2.9% of those aged 30–44 years. When these percentages are applied to the total number of such men in the United States (*7*), over 700,000 single men 18–29 years and over 100,000 single men 30–44 years may have 10 or more partners per year and hence appear to be at considerable risk of sexual exposure to HIV-1 and other STDs.

The distribution of partners reported in the GSS is similar to another survey of 713 adults aged 18–64 years conducted in November 1986 in the United Kingdom (*8*). In that survey, 20% of 481 men and 25% of 232 women reported no partners of the opposite sex in the prior 12 months, 66% of men and 65% of women reported one partner, 9% of men and 3% of women reported two or more partners, and 5% of men and 7% of women refused to answer or were not asked the question. Similarly, a U.S. telephone survey of 2095 adults conducted by the *Los Angeles Times* in July 1987 yielded estimates of 15% with no sex partners in the last year, 70% with one partner, 8% with two to four partners, 3% with five or more partners, and 4% refused to answer or were "not sure."

While the response rate in the GSS varies by a few percentage points from one year to another, the 1988 rate of 77.3% is well within the usual range. Furthermore, GSS data compare closely with decennial census and current population survey data

*The 1988 GSS data set is available at a cost of $100 from the Roper Center for Public Opinion Research, P.O. Box 440, Storrs, CT 06268; telephone: (203) 486-4440. In the public-use tape, nine respondents are coded as having "one or more partners"; seven were recoded for this analysis to have one partner. It appears that all these persons misunderstood and did not count their spouses as sex partners although they listed their spouses as one. The other two were men and were recoded here to have two partners because one listed a spouse and an acquaintance while the other listed a spouse and a friend.

HIV – Continued

on the demographic and economic characteristics of the U.S. population (*9*). Almost half (47%) the 1481 respondents in the 1988 GSS were telephoned after the survey to verify that they had participated, and these telephone call-backs provide additional confidence in the quality of the GSS data. Finally, those who did not respond to the self-administered sex-partner questionnaire (6.1%) did not appear to be different in their demographic characteristics (sex, age, race, or marital status) from those who responded; however, nonrespondents to the sex-partner supplement were slightly less well educated.

Nevertheless, the GSS sample size was small, and respondents may have been reluctant to answer sensitive questions about sexual activities with the same degree of candor with which they answer less sensitive questions. Further studies with larger samples are under way to assess the validity of responses to sensitive questions about sexual activities and to obtain better estimates of the risk of sexual exposure to HIV-1 and other STDs in the United States.

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Update: Sudden Unexplained Death Syndrome Among Southeast Asian Refugees – United States

Between October 1, 1986, and April 30, 1988, 10 cases of sudden unexplained death syndrome (SUDS) in Southeast Asian (SEA) refugees were reported to CDC. In addition, three earlier reports were confirmed as SUDS based on additional information. These 13 reports bring the total number of SUDS in SEA refugees to 117 since CDC surveillance for SUDS began in 1981 (*1,2*). Since 1982, the number of SUDS cases has continued to decline (Figure 1). Five deaths occurred in 1987 and two in the first 4 months of 1988. The crude death rate in SEA males for 1987 was 1.1 per 100,000, the lowest since 1976.

The 13 new cases occurred in nine states. California reported the most cases (four), followed by Minnesota (two). North Carolina and Arizona, which previously had not reported cases, had SUDS cases in January and May 1987, respectively. Otherwise, the geographic distribution of cases remains similar to that of previously reported

SUDS — Continued

cases (Table 1) (*1*). Age at death ranged from 19 to 57 years (median: 33 years). All decedents were men. Nine were Laotian (five Hmong, two lowland Lao, and two unknown), and two each were Vietnamese and Kampuchean. Twelve of the deaths occurred either at night or during sleep. One decedent, a Laotian man, had a cardiac arrest at night during sleep. He was resuscitated but was comatose when hospitalized; his condition deteriorated, and he was pronounced brain dead 4 days later.

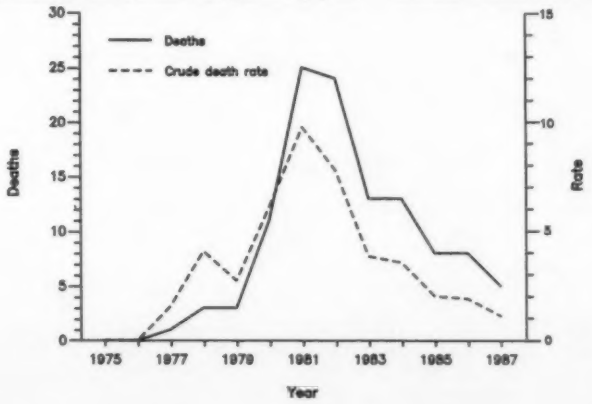
Length of time in the United States was known for seven of the 13 decedents and ranged from 1 to 11 years (median: 4 years). The median length of time in the United States for the 88 of the 117 decedents for whom time in the United States was known was 17 months.

Reported by: Surveillance and Programs Br, Div of Environmental Hazards and Health Effects, Center for Environmental Health and Injury Control, CDC.

Editorial Note: CDC continues to receive reports of sudden deaths in SEA refugees in the United States, although the number of reported cases and the crude death rate continue to decline. Approximately 850,000 SEA refugees live in the United States (*3*). The number of new arrivals has declined since its peak of 151,000 in 1980 and was only 36,000 in 1987 (*4,5*). The decline in SUDS cases may be related to this decline in newly arrived SEA refugees, since most deaths occur within the first 2 years after arrival in the United States. The ceiling for East Asian (including SEA) refugee admissions in fiscal year 1988 (October 1, 1987, to September 30, 1988) for the United States is 38,000 (*5*). Assuming the previous pattern continues, the number and rate of SUDS deaths in 1988 will probably remain at 4–5 deaths and 1–2 deaths per 100,000 males, respectively. Although studies have suggested that a structural abnormality of the cardiac conduction system (*6*) and stress (*7*) may be risk factors for SUDS, the cause of the deaths remains unknown.

Please direct case reports and questions about sudden deaths in SEA refugees directly to the Surveillance and Programs Branch, Division of Environmental Hazards and Health Effects, Center for Environmental Health and Injury Control, CDC, telephone: (404) 488-4780.

FIGURE 1. Sudden unexplained death syndrome cases and crude death rates per 100,000 Southeast Asian male refugees, by year — United States, 1975–1987



SUDS — Continued

TABLE 1. Distribution of 117 reported cases of sudden unexplained death syndrome and Southeast Asian (SEA) refugee population, by state — United States, through April 30, 1988

State	Reported cases		SEA refugee population*	
	No.	(%)	No.	(%)
Arizona	1	(1)	6,700	(1)
California	36	(1)	335,400	(9)
Colorado	1	(1)	11,700	(1)
District of Columbia	1	(1)	1,500	(<1)
Georgia	1	(1)	11,000	(1)
Illinois	5	(4)	27,900	(3)
Iowa	2	(2)	9,200	(1)
Maine	1	(1)	1,700	(<1)
Maryland	1	(1)	10,000	(1)
Massachusetts	3	(3)	27,000	(3)
Michigan	4	(3)	11,700	(1)
Minnesota	17	(15)	29,800	(3)
New Hampshire	1	(1)	900	(<1)
New York	1	(1)	31,300	(4)
North Carolina	1	(1)	6,300	(1)
Ohio	3	(3)	12,000	(1)
Oklahoma	3	(3)	8,800	(1)
Oregon	9	(8)	19,500	(2)
Rhode Island	4	(3)	7,100	(1)
Texas	7	(6)	64,600	(8)
Utah	1	(1)	8,900	(1)
Virginia	1	(1)	22,600	(3)
Washington	11	(9)	40,200	(5)
Wisconsin	2	(2)	12,500	(1)
Other†	0		134,400	(16)
Total	**117**	**(100)**	**852,700**	**(100)**

*Based on U.S. SEA refugee population, as of February 29, 1988 (Office of Refugee Resettlement, Social Security Administration, US Department of Health and Human Services, personal communication).

†Twenty-seven states have not reported any SUDS cases.

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Epidemiologic Notes and Reports

Fansidar-Associated Fatal Reaction in an HIV-Infected Man

In March 1987, a 48-year-old homosexual man with oral thrush and a single dermatome zoster infection was found to be human immunodeficiency virus (HIV)-seropositive by enzyme immunoassay and Western blot. He had a depressed T4 lymphocyte count of 359 cells/mm^3 (normal: ≥800 T4 cells/mm^3), and weekly pentamidine aerosol treatments were begun for prophylaxis against *Pneumocystis carinii* pneumonia (PCP). In late July 1987, the patient's T4 count had decreased to 311 cells/mm^3, and weekly pyrimethamine 25 mg/sulfadoxine 500 mg (Fansidar*) was added to his prophylactic regimen.

In late August, while still on weekly pentamidine aerosols and oral Fansidar, he developed a maculopapular rash on his neck. During the next 10 days, the rash spread to his arms, legs, and trunk, and multiple bullae developed. He took one or two additional doses of Fansidar during this time. In early September, the patient was hospitalized with oropharyngeal blisters and extensive cutaneous lesions and was diagnosed initially as having disseminated zoster; treatment with intravenous acyclovir was begun. The next day, a skin biopsy showed toxic epidermal necrolysis. Despite aggressive intensive care, the patient rapidly developed fever, hypotension, and acute renal failure and died 48 hours after admission.

Reported by: Malaria Br and Parasitic Diseases Br, Div of Parasitic Diseases; AIDS Program, Center for Infectious Diseases, CDC.

Editorial Note: This is the first report of a fatal cutaneous adverse reaction associated with Fansidar prophylaxis for PCP in an HIV-infected patient. Four nonfatal cases of Stevens-Johnson syndrome (severe erythema multiforme) in AIDS patients receiving Fansidar prophylaxis have been reported (*1*). Severe cutaneous adverse reactions (including erythema multiforme, Stevens-Johnson syndrome, and toxic epidermal necrolysis) also have been reported among American travelers using Fansidar for malaria prophylaxis. These studies have estimated the incidence of these reactions to be one per 5,000–8,000 users, and fatalities, one per 11,000–25,000 users (*2*). A comparable incidence was noted when sulfadoxine alone was used for prophylaxis of meningococcal disease in Morocco (*3*) and for cholera in Mozambique (*4*).

PCP, the most frequent opportunistic infection in American patients with AIDS, occurs in 56% of patients as the initial manifestation of the syndrome (*5*). In addition, PCP frequently recurs after successful treatment. Trimethoprim/sulfamethoxazole is effective in treating PCP in AIDS patients but is associated with rash, fever, and neutropenia in up to 54% of cases, which may necessitate discontinuation or change of therapy (*6*). Parenteral pentamidine is an effective chemotherapeutic agent but also may be associated with a high frequency of unacceptable adverse reactions including neutropenia, azotemia, and severe rash (*7*).

While trimethoprim/sulfamethoxazole and pentamidine are considered, respectively, the first and second drugs of choice for the treatment of PCP in AIDS patients, data concerning comparative safety and efficacy of various chemoprophylactic regimens are limited. Because of the high morbidity and mortality associated with first and recurrent episodes of PCP, some investigators have proposed chemoprophy-

*Use of trade names is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

Fatal Reaction — Continued

laxis for asymptomatic HIV-seropositive patients with low T4 lymphocyte counts as well as for AIDS patients with a history of PCP. Drugs used in this setting have included trimethoprim/sulfamethoxazole, intramuscular or aerosolized inhaled pentamidine, dapsone, and Fansidar (*8,9*). A multicenter, randomized double-blind, placebo-controlled study is scheduled to ascertain the comparative efficacy and safety of trimethoprim/sulfamethoxazole, Fansidar, and aerosolized pentamidine for prophylaxis of PCP in AIDS patients receiving azidothymidine. However, no experimental evidence is available to suggest that Fansidar is biologically more active than trimethoprim/sulfamethoxazole against *P. carinii*. In addition, longer-acting sulfonamides (such as sulfadoxine) have been implicated as the cause of severe mucocutaneous reactions 10–20 times more frequently than shorter-acting congeners (*10*). Consequently, the only advantage of selecting Fansidar as a first-line prophylactic drug in these patients would be potentially improved patient compliance due to weekly rather than daily dosing.

(Continued on page 577)

TABLE I. Summary — cases of specified notifiable diseases, United States

Disease	37th Week Ending			Cumulative, 37th Week Ending		
	Sep. 17, 1988	Sep. 19, 1987	Median 1983-1987	Sep. 17, 1988	Sep. 19, 1987	Median 1983-1987
Acquired Immunodeficiency Syndrome (AIDS)	472	U*	151	21,956	13,591	5,418
Aseptic meningitis	221	461	461	4,008	7,774	6,619
Encephalitis: Primary (arthroped-borne & unspec)	20	44	44	545	904	815
Post-infectious	3	1	2	91	84	84
Gonorrhea: Civilian	13,291	13,612	17,564	479,908	551,799	617,874
Military	156	220	345	9,482	11,869	15,122
Hepatitis: Type A	475	510	430	17,353	17,470	15,477
Type B	388	450	450	15,982	18,206	18,093
Non A, Non B	26	49	52	1,835	2,203	2,553
Unspecified	35	97	97	1,490	2,249	3,448
Legionellosis	16	16	19	654	674	506
Leprosy	-	8	5	115	145	177
Malaria	22	22	21	554	659	670
Measles: Total†	33	57	39	2,212	3,311	2,456
Indigenous	32	49	27	1,984	2,909	2,048
Imported	1	8	8	228	402	280
Meningococcal infections	30	24	25	2,127	2,161	2,045
Mumps	27	57	35	3,439	10,317	2,443
Pertussis	33	52	86	1,767	1,768	1,768
Rubella (German measles)	1	12	5	159	302	548
Syphilis (Primary & Secondary): Civilian	537	611	545	28,404	24,831	19,619
Military	2	1	1	115	127	127
Toxic Shock syndrome	8	7	9	233	236	281
Tuberculosis	403	425	426	14,741	14,997	15,036
Tularemia	4	3	4	145	148	148
Typhoid Fever	11	11	11	241	235	240
Typhus fever, tick-borne (RMSF)	9	29	27	502	505	579
Rabies, animal	81	97	114	3,012	3,466	3,849

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1988		Cum. 1988
Anthrax	-	Leptospirosis (Hawaii, 3)	24
Botulism: Foodborne	17	Plague (Calif. 1, Ariz. 1)	14
Infant (Hawaii 1)	26	Poliomyelitis, Paralytic	-
Other	3	Psittacosis (N.H. 1, N.C. 2)	64
Brucellosis (Tex. 1)	44	Rabies, human	-
Cholera	2	Tetanus	34
Congenital rubella syndrome	3	Trichinosis	36
Congenital syphilis, ages < 1 year	302		
Diphtheria	-		

*Because AIDS cases are not received weekly from all reporting areas, comparison of weekly figures may be misleading.
†One of the 33 reported cases for this week was imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending September 17, 1988 and September 19, 1987 (37th Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988
UNITED STATES	21,956	4,008	545	91	479,908	551,799	17,353	15,982	1,836	1,490	654	115
NEW ENGLAND	959	246	19	6	15,132	16,822	632	875	100	74	28	15
Maine	26	12	1	-	300	501	17	45	4	1	3	-
N.H.	26	32	1	3	191	286	37	55	7	4	3	-
Vt.	9	15	6	-	92	150	12	30	5	3	1	-
Mass.	533	98	8	3	5,151	6,111	295	523	67	51	18	14
R.I.	58	56	-	-	1,349	1,505	70	87	10	-	3	1
Conn.	307	33	3	-	8,049	8,269	201	155	7	15	-	-
MID. ATLANTIC	7,269	390	47	4	73,420	87,483	1,167	2,219	132	169	170	8
Upstate N.Y.	976	246	28	1	9,797	12,215	530	548	49	15	69	-
N.Y. City	3,904	83	8	3	30,282	45,379	240	911	12	122	30	7
N.J.	1,771	61	11	-	11,020	11,480	214	530	47	29	40	1
Pa.	618	-	-	-	22,321	18,409	183	230	24	3	31	-
E.N. CENTRAL	1,582	632	139	12	79,952	83,116	1,156	1,702	166	84	134	4
Ohio	361	217	45	3	18,085	18,275	253	389	27	16	54	-
Ind.	80	64	16	-	6,157	6,456	106	245	17	20	15	-
Ill.	729	78	32	9	23,873	25,348	340	365	58	19	-	3
Mich.	334	242	33	-	25,984	25,653	277	504	42	26	47	-
Wis.	78	31	13	-	5,853	7,384	180	199	22	3	18	1
W.N. CENTRAL	520	175	37	7	20,452	22,523	1,018	748	84	26	60	1
Minn.	114	27	9	3	2,768	3,452	79	96	16	3	2	-
Iowa	28	26	8	-	1,528	2,145	37	71	13	1	16	-
Mo.	264	66	1	-	11,608	11,830	587	432	36	14	13	-
N. Dak.	4	-	4	-	115	211	4	8	3	4	1	-
S. Dak.	5	16	1	1	370	417	8	4	2	-	14	-
Nebr.	30	9	8	2	1,140	1,411	44	39	2	-	5	-
Kans.	75	32	6	1	2,923	3,057	259	98	12	4	9	1
S. ATLANTIC	3,843	873	79	31	136,997	144,172	1,592	3,427	278	234	109	1
Del.	52	26	3	-	2,092	2,397	28	104	6	2	10	-
Md.	411	120	7	3	14,022	16,292	212	486	30	21	17	1
D.C.	351	16	1	1	9,899	9,552	12	32	3	1	1	-
Va.	225	97	23	3	9,828	10,574	286	224	56	149	8	-
W. Va.	14	21	16	-	962	1,068	10	51	3	3	-	-
N.C.	201	101	18	-	19,183	20,973	233	586	70	-	28	-
S.C.	133	15	-	1	10,612	11,855	33	373	10	5	16	-
Ga.	504	96	1	-	26,502	25,770	359	466	11	6	15	-
Fla.	1,952	381	10	23	43,897	45,691	419	1,063	89	47	14	-
E.S. CENTRAL	574	243	45	6	38,288	41,611	527	973	129	7	30	1
Ky.	70	67	11	1	3,860	4,218	393	177	44	2	10	-
Tenn.	268	22	13	-	12,720	14,528	79	486	34	-	7	-
Ala.	145	127	21	2	11,972	13,221	34	233	42	5	10	1
Miss.	91	27	-	3	9,736	9,644	21	77	9	-	3	-
W.S. CENTRAL	1,820	510	63	3	53,015	62,456	2,030	1,336	155	372	16	19
Ark.	71	9	4	-	5,304	7,131	247	79	4	13	3	-
La.	251	81	19	1	10,746	11,075	101	249	20	11	5	1
Okla.	99	49	4	-	5,004	6,926	379	130	34	22	8	-
Tex.	1,399	371	36	2	31,961	37,322	1,303	878	97	326	-	18
MOUNTAIN	644	147	22	2	10,493	14,599	2,409	1,199	192	122	34	1
Mont.	11	2	-	-	328	403	27	42	10	4	1	-
Idaho	8	1	-	-	271	524	111	81	5	3	-	-
Wyo.	5	2	-	-	151	319	5	12	3	-	3	-
Colo.	230	58	3	-	2,271	3,230	182	148	54	58	8	1
N. Mex.	36	12	2	-	1,017	1,593	429	175	16	2	2	-
Ariz.	309	41	8	1	3,783	4,980	1,262	470	56	37	13	-
Utah	50	20	4	1	309	453	237	98	33	14	3	-
Nev.	95	11	5	-	2,273	3,117	175	173	15	4	4	-
PACIFIC	4,745	792	94	20	52,159	79,017	6,823	3,503	599	402	73	65
Wash.	283	-	6	4	4,871	6,187	1,543	609	147	46	15	4
Oreg.	141	-	-	-	2,251	2,916	984	425	61	21	-	1
Calif.	4,232	700	83	16	43,840	68,077	3,955	2,386	382	324	55	52
Alaska	16	14	3	-	743	1,229	332	45	5	6	-	1
Hawaii	73	78	2	-	454	608	9	39	4	5	3	7
Guam	1	-	-	-	97	154	9	11	-	2	1	4
P.R.	845	42	3	1	962	1,469	31	190	34	33	-	3
V.I.	32	-	-	-	297	194	1	5	2	-	-	-
Amer. Samoa	-	-	-	-	65	61	3	2	-	5	-	2
C.N.M.I.	-	-	-	-	34	-	1	2	-	4	-	1

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of the Northern Mariana Islands

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending September 17, 1988 and September 19, 1987 (37th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1988	1988	Cum. 1988	1988	Cum. 1988	Cum. 1987	Cum. 1988	1988	Cum. 1988	1988	Cum. 1988	Cum. 1987	1988	Cum. 1988	Cum. 1987
UNITED STATES	654	32	1,984	1	228	3,311	2,127	27	3,439	33	1,767	1,768	1	159	302
NEW ENGLAND	50	-	81	-	50	269	185	-	197	-	125	114	1	6	1
Maine	2	-	7	-	-	3	8	-	-	-	11	26	-	-	1
N.H.	2	-	66	-	44	162	22	-	96	-	34	27	-	3	-
Vt.	4	-	-	-	-	26	13	-	4	-	3	4	-	-	-
Mass.	26	-	1	-	2	54	84	-	7	-	50	42	1	2	-
R.I.	6	-	-	-	-	2	21	-	-	-	10	1	-	1	-
Conn.	10	-	7	-	4	22	37	-	-	-	17	14	-	-	-
MID. ATLANTIC	103	-	801	-	47	577	219	2	266	3	109	206	-	12	11
Upstate N.Y.	26	-	19	-	18	40	101	2	82	3	68	120	-	2	9
N.Y. City	54	-	41	-	5	460	54	-	94	-	4	4	-	7	1
N.J.	11	-	217	-	11	39	63	-	35	-	4	11	-	1	1
Pa.	12	-	524	-	13	38	1	-	77	-	33	71	-	2	-
E.N. CENTRAL	34	-	132	-	48	318	292	3	702	3	180	215	-	26	36
Ohio	8	-	2	-	23	5	102	-	97	-	25	55	-	1	-
Ind.	2	-	57	-	-	-	24	-	69	-	61	15	-	-	-
Ill.	2	-	55	-	16	140	64	1	265	1	29	15	-	21	26
Mich.	19	-	18	-	5	29	64	2	177	2	32	41	-	4	9
Wis.	3	-	-	-	4	144	38	-	94	-	33	89	-	-	1
W.N. CENTRAL	17	-	11	-	1	230	79	1	119	1	107	97	-	2	1
Minn.	5	-	10	-	1	39	17	-	-	-	49	13	-	-	-
Iowa	2	-	-	-	-	-	-	1	32	1	21	32	-	-	1
Mo.	6	-	1	-	-	186	27	-	30	-	15	24	-	-	-
N. Dak.	-	-	-	-	-	1	-	-	-	-	11	11	-	-	-
S. Dak.	-	-	-	-	-	-	3	-	1	-	5	3	-	-	-
Nebr.	1	-	-	-	-	-	12	-	11	-	-	1	-	-	-
Kans.	3	-	-	-	-	1	20	-	45	-	6	13	-	2	-
S. ATLANTIC	79	-	289	-	16	131	370	10	550	2	199	249	-	17	14
Del.	1	-	-	-	-	32	2	-	-	-	7	5	-	-	2
Md.	10	-	11	-	3	5	43	-	103	-	32	11	-	1	2
D.C.	11	-	-	-	-	1	7	2	216	-	1	-	-	-	-
Va.	11	-	141	-	2	1	41	-	119	-	21	47	-	11	1
W. Va.	-	-	6	-	-	-	6	4	13	-	9	35	-	-	-
N.C.	11	-	-	-	4	5	61	2	43	2	57	105	-	-	1
S.C.	9	-	-	-	-	2	33	-	5	-	1	-	-	-	-
Ga.	4	-	-	-	-	1	55	-	27	-	31	23	-	2	1
Fla.	22	-	131	-	7	84	122	2	24	-	41	23	-	3	7
E.S. CENTRAL	12	1	56	-	-	5	199	-	389	3	69	33	-	2	3
Ky.	-	-	35	-	-	-	39	-	174	-	6	1	-	-	2
Tenn.	-	1	1	-	-	-	116	-	200	-	20	9	-	2	1
Ala.	7	-	1	-	-	3	31	-	12	3	40	18	-	-	-
Miss.	5	-	19	-	-	2	13	N	N	-	3	5	-	-	-
W.S. CENTRAL	60	-	11	-	3	409	137	4	673	2	98	222	-	7	11
Ark.	3	-	-	-	1	-	17	-	91	-	11	10	-	3	2
La.	9	-	-	-	-	-	40	3	265	-	16	42	-	-	-
Okla.	9	-	8	-	-	3	14	-	173	2	42	119	-	1	5
Tex.	39	-	3	-	2	406	66	1	144	-	27	51	-	3	4
MOUNTAIN	33	-	118	-	21	491	60	2	164	11	544	155	-	6	24
Mont.	5	-	6	-	19	128	2	-	2	-	2	6	-	-	8
Idaho	2	-	-	-	1	-	7	-	3	4	287	44	-	-	1
Wyo.	-	-	-	-	-	2	-	1	3	-	1	5	-	-	1
Colo.	11	-	112	-	1	9	15	-	28	1	15	54	-	2	-
N. Mex.	2	-	-	-	-	317	11	N	N	2	47	9	-	-	-
Ariz.	8	-	-	-	-	31	15	-	108	4	171	29	-	-	4
Utah	4	-	-	-	-	1	9	1	7	-	20	8	-	3	10
Nev.	1	-	-	-	-	3	1	-	13	-	1	-	-	1	-
PACIFIC	286	31	486	1	42	881	586	5	447	8	338	477	-	81	201
Wash.	15	-	2	-	-	41	53	2	42	3	82	88	-	-	2
Oreg.	11	1	4	-	-	79	32	N	N	1	27	88	-	-	2
Calif.	228	30	476	11	34	757	490	3	372	4	176	167	-	57	126
Alaska	3	-	-	-	-	-	6	-	9	-	6	8	-	-	2
Hawaii	9	-	3	-	8	4	15	-	13	-	45	126	-	24	69
Guam	-	-	-	-	1	2	-	-	2	-	-	-	-	1	1
P.R.	2	-	190	-	-	737	8	-	8	-	13	16	-	2	2
V.I.	-	-	-	-	-	-	-	-	29	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	2	-	3	-	-	-	-	-	-
C.N.M.I.	1	-	-	-	-	-	1	-	2	-	-	-	-	-	-

*For measles only, imported cases includes both out-of-state and international importations.
N: Not notifiable U: Unavailable †International §Out-of-state

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending September 17, 1988 and September 19, 1987 (37th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988
UNITED STATES	28,404	24,831	233	14,741	14,997	145	241	502	3,012
NEW ENGLAND	793	436	19	371	451	4	21	10	13
Maine	12	1	4	18	22	-	-	-	1
N.H.	6	3	3	8	16	-	-	-	5
Vt.	3	2	2	3	9	-	1	-	-
Mass.	301	202	8	211	251	3	13	5	-
R.I.	26	8	-	32	35	-	-	2	-
Conn.	445	220	2	99	118	1	7	3	7
MID. ATLANTIC	7,156	4,640	34	2,900	2,557	-	46	18	339
Upstate N.Y.	373	167	18	357	365	-	7	9	28
N.Y. City	5,206	3,394	5	1,573	1,223	-	28	6	-
N.J.	652	484	3	470	485	-	11	-	13
Pa.	925	595	8	470	484	-	-	3	298
E.N. CENTRAL	780	649	35	1,832	1,703	1	24	49	111
Ohio	74	77	23	306	324	-	6	38	5
Ind.	39	45	1	161	165	-	2	2	17
Ill.	365	350	1	694	753	-	11	6	24
Mich.	278	130	10	398	385	1	4	2	32
Wis.	24	47	-	73	76	-	1	1	33
W.N. CENTRAL	171	139	29	383	444	68	3	74	357
Minn.	16	14	5	62	91	3	2	2	109
Iowa	17	20	5	42	31	-	-	-	13
Mo.	105	67	7	193	241	40	1	43	16
N. Dak.	1	-	2	10	6	1	-	-	74
S. Dak.	-	10	2	26	22	16	-	7	101
Nebr.	26	7	3	10	18	2	-	1	14
Kans.	6	20	5	40	35	6	-	21	30
S. ATLANTIC	9,917	8,483	16	3,169	3,207	5	27	155	1,026
Del.	77	58	1	28	33	2	-	1	42
Md.	537	440	3	300	282	-	1	19	236
D.C.	478	251	-	136	107	-	1	-	5
Va.	285	214	-	291	314	2	10	14	275
W. Va.	34	6	-	54	77	-	1	2	79
N.C.	585	478	7	315	350	-	1	87	7
S.C.	509	548	2	358	337	-	-	16	77
Ga.	1,700	1,190	-	519	559	1	2	12	198
Fla.	5,732	5,298	3	1,170	1,138	-	11	4	109
E.S. CENTRAL	1,377	1,376	18	1,199	1,310	8	3	66	211
Ky.	46	13	7	283	296	4	1	16	78
Tenn.	583	544	8	326	382	3	-	34	83
Ala.	415	356	3	376	377	-	1	9	68
Miss.	333	463	-	214	255	1	1	7	2
W.S. CENTRAL	3,009	3,032	21	1,848	1,738	44	7	115	398
Ark.	170	199	1	202	206	28	-	20	64
La.	578	553	-	209	186	-	3	2	7
Okla.	111	105	8	174	165	13	-	80	27
Tex.	2,150	2,175	12	1,283	1,179	3	4	13	300
MOUNTAIN	543	480	26	396	445	10	8	11	272
Mont.	3	8	-	12	10	-	1	6	164
Idaho	2	5	4	16	26	-	-	1	10
Wyo.	1	3	-	5	2	2	-	3	32
Colo.	79	80	3	43	126	5	3	1	24
N. Mex.	39	40	1	74	73	2	1	-	7
Ariz.	117	231	9	181	172	-	3	-	30
Utah	13	21	9	18	16	1	-	-	5
Nev.	289	92	-	46	20	-	-	-	-
PACIFIC	4,658	5,597	35	2,844	3,142	5	102	4	285
Wash.	116	108	4	157	186	-	6	1	-
Oreg.	202	204	1	110	80	-	6	1	-
Calif.	4,306	5,272	30	2,440	2,697	3	87	2	276
Alaska	10	3	-	29	45	2	-	-	9
Hawaii	24	10	-	108	136	-	3	-	-
Guam	3	2	-	16	26	-	-	-	-
P.R.	447	661	-	175	215	-	4	-	50
V.I.	1	5	-	4	2	-	-	-	-
Amer. Samoa	-	-	-	3	7	-	1	-	-
C.N.M.I.	1	-	-	17	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending September 17, 1988 (37th Week)

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	>65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	601	406	108	52	16	19	26
Boston, Mass.	163	101	31	15	7	9	12
Bridgeport, Conn.	34	26	7	-	1	-	-
Cambridge, Mass.	27	20	6	-	-	1	2
Fall River, Mass.	20	15	5	-	-	-	-
Hartford, Conn.	60	38	9	7	2	4	1
Lowell, Mass.	25	16	7	2	-	-	1
Lynn, Mass.	18	12	1	4	1	-	1
New Bedford, Mass.	26	19	3	3	1	-	1
New Haven, Conn.	36	21	7	6	1	1	2
Providence, R.I.	51	36	12	1	-	2	-
Somerville, Mass.	5	5	-	-	-	-	-
Springfield, Mass.	44	30	8	5	-	1	-
Waterbury, Conn.	28	21	3	4	-	-	4
Worcester, Mass.	64	46	9	5	3	1	2
MID. ATLANTIC	2,819	1,786	577	292	76	88	121
Albany, N.Y.	53	32	14	3	2	2	4
Allentown, Pa.	16	15	-	-	1	-	-
Buffalo, N.Y.	141	99	28	10	1	3	12
Camden, N.J.	41	26	10	1	-	4	2
Elizabeth, N.J.	27	21	3	3	-	-	2
Erie, Pa.†	40	29	8	3	-	-	-
Jersey City, N.J.§	63	39	12	8	2	2	1
N.Y. City, N.Y.	1,484	904	305	191	40	44	51
Newark, N.J.	48	19	13	9	2	5	3
Paterson, N.J.	33	22	8	1	1	1	1
Philadelphia, Pa.	403	252	88	40	15	8	10
Pittsburgh, Pa.†	58	36	9	7	2	2	-
Reading, Pa.	40	33	3	1	1	2	6
Rochester, N.Y.	126	84	26	5	3	8	14
Schenectady, N.Y.	29	24	4	1	-	-	3
Scranton, Pa.†	23	14	5	1	3	-	-
Syracuse, N.Y.	109	75	24	4	2	4	5
Trenton, N.J.	38	22	11	2	-	3	2
Utica, N.Y.	12	9	2	1	-	-	-
Yonkers, N.Y.	37	31	4	1	1	-	5
E.N. CENTRAL	2,308	1,494	502	167	60	85	83
Akron, Ohio	57	41	11	1	1	3	-
Canton, Ohio	22	14	6	1	1	-	2
Chicago, Ill.§	564	362	125	45	10	22	16
Cincinnati, Ohio	130	90	28	4	4	4	7
Cleveland, Ohio	182	108	42	21	5	6	3
Columbus, Ohio	124	63	33	9	11	8	1
Dayton, Ohio	127	89	25	7	3	3	4
Detroit, Mich.	284	158	70	32	8	16	10
Evansville, Ind.	37	28	2	5	1	1	3
Fort Wayne, Ind.	58	39	10	6	1	2	4
Gary, Ind.	17	9	7	1	-	-	1
Grand Rapids, Mich.	55	41	8	5	1	-	5
Indianapolis, Ind.	172	120	37	8	4	3	1
Madison, Wis.	38	28	7	1	1	1	-
Milwaukee, Wis.	136	93	28	7	3	5	6
Peoria, Ill.	47	30	12	2	-	3	6
Rockford, Ill.	43	35	3	2	3	-	3
South Bend, Ind.	46	37	6	-	2	1	4
Toledo, Ohio	91	61	25	4	-	1	4
Youngstown, Ohio	78	48	17	6	1	6	3
W.N. CENTRAL	860	600	161	52	27	20	35
Des Moines, Iowa	81	55	15	2	3	2	4
Duluth, Minn.	29	21	6	1	1	-	2
Kansas City, Kans.	30	23	3	3	1	-	3
Kansas City, Mo.	140	86	37	10	6	1	9
Lincoln, Nebr.	32	19	11	1	-	1	-
Minneapolis, Minn.	164	110	28	19	5	2	7
Omaha, Nebr.	86	57	14	7	4	4	4
St. Louis, Mo.	143	104	24	5	4	6	-
St. Paul, Minn.	84	67	9	3	2	3	3
Wichita, Kans.§	71	54	14	1	1	1	3
S. ATLANTIC	1,192	694	280	144	41	32	46
Atlanta, Ga.	136	68	41	17	1	8	2
Baltimore, Md.	181	106	41	22	6	6	5
Charlotte, N.C.	92	52	21	11	3	5	9
Jacksonville, Fla.	125	80	25	12	7	-	5
Miami, Fla.	117	58	30	19	7	3	1
Norfolk, Va.	54	30	14	7	1	2	3
Richmond, Va.	100	60	24	9	5	2	5
Savannah, Ga.	45	32	7	3	2	1	4
St. Petersburg, Fla.	70	60	8	1	-	1	3
Tampa, Fla.	61	33	16	9	2	1	5
Washington, D.C.	178	93	45	31	7	2	4
Wilmington, Del.	33	22	8	3	-	-	-
E.S. CENTRAL	748	474	156	62	21	34	32
Birmingham, Ala.	139	93	25	11	6	4	4
Chattanooga, Tenn.	63	47	12	2	2	-	4
Knoxville, Tenn.	51	30	11	4	1	5	2
Louisville, Ky.	150	91	33	11	3	12	5
Memphis, Tenn.	138	90	24	14	3	7	8
Mobile, Ala.	43	27	11	3	2	-	2
Montgomery, Ala.	52	36	8	3	2	3	1
Nashville, Tenn.	112	60	32	14	2	3	6
W.S. CENTRAL	1,761	1,037	401	193	81	49	53
Austin, Tex.	52	38	6	5	2	1	4
Baton Rouge, La.	24	14	7	1	-	2	-
Corpus Christi, Tex.§	49	38	10	1	-	-	1
Dallas, Tex.	195	93	53	24	18	7	3
El Paso, Tex.	73	40	17	9	6	1	4
Fort Worth, Tex	100	58	20	8	6	8	3
Houston, Tex.§	743	438	172	92	25	16	19
Little Rock, Ark.	84	54	19	6	3	2	4
New Orleans, La.	105	61	22	13	6	3	-
San Antonio, Tex.	198	114	44	20	12	8	8
Shreveport, La.	22	17	3	2	-	-	1
Tulsa, Okla.	116	72	28	12	3	1	6
MOUNTAIN	601	379	127	57	20	18	23
Albuquerque, N. Mex.	78	58	8	5	6	1	3
Colo. Springs, Colo.	43	28	10	1	2	2	3
Denver, Colo.	113	69	30	8	1	5	4
Las Vegas, Nev.	93	50	23	16	1	3	5
Ogden, Utah	21	16	3	-	-	-	-
Phoenix, Ariz.	109	73	18	12	2	4	2
Pueblo, Colo.	17	14	3	-	-	-	1
Salt Lake City, Utah	40	16	13	7	3	1	1
Tucson, Ariz.	87	53	19	8	5	2	4
PACIFIC	2,065	1,329	399	205	79	48	100
Berkeley, Calif.	15	8	5	2	-	-	-
Fresno, Calif.	87	57	18	7	2	3	4
Glendale, Calif.	24	17	3	3	-	-	-
Honolulu, Hawaii	65	39	14	8	2	2	6
Long Beach, Calif.	96	55	22	9	5	4	10
Los Angeles Calif.	601	414	103	51	23	6	15
Oakland, Calif.	55	30	15	5	2	3	4
Pasadena, Calif.	46	30	11	2	2	-	2
Portland, Oreg.	152	95	37	13	3	4	6
Sacramento, Calif.	151	102	23	13	8	5	17
San Diego, Calif.	182	107	38	24	9	4	13
San Francisco, Calif.	169	109	30	21	3	6	2
San Jose, Calif.	161	97	29	21	5	9	10
Seattle, Wash.	148	83	35	17	11	-	-
Spokane, Wash.	48	31	9	3	4	1	1
Tacoma, Wash.	69	55	7	6	-	1	10
TOTAL	12,955††	8,199	2,711	1,224	421	393	519

*Mortality data in this table are voluntarily reported from 121 cities in the United states, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

**Pneumonia and influenza.

†Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

††Total includes unknown ages.

§Data not available. Figures are estimates based on average of past available 4 weeks.

Fatal Reaction — Continued

This report emphasizes the importance of closely monitoring AIDS patients for adverse reactions to prophylactic drugs. In any patient receiving Fansidar or other prophylactic medication, the appearance of new cutaneous lesions should prompt immediate discontinuation of the drug until the etiology of the lesions is determined.

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Yersinia enterocolitica Bacteremia and Endotoxin Shock Associated with Red Blood Cell Transfusion — United States, 1987–1988

Four cases of *Yersinia enterocolitica* bacteremia associated with packed red blood cell (PRBC) transfusions were reported from April 1987 through August 1988. All case-patients developed chills, fever, hypotension, and at least one of the following: renal failure, respiratory failure, and/or coagulopathy. Two patients died. All case-patients developed symptoms while receiving PRBCs that had been stored at 4 C for 26–42 days. Patient blood cultures and residual RBCs from each blood bag grew *Y. enterocolitica*, serotype O:3 (three cases) or O:1,2,3 (one). Of the three case-patients for whom investigations have been completed, two donors had histories of gastrointestinal illness during the 2 weeks before donation of the implicated units of blood; results of serologic studies were compatible with recent *Yersinia* sp. infection in the two donors. The third donor was asymptomatic.

Reported by: JP Davis, MD, State Epidemiologist, Wisconsin Dept of Health and Social Svcs. M Moser, MD, State Epidemiologist, Kentucky Dept of Health Svcs. RH Hutcheson, MD, State Epidemiologist, Tennessee Dept of Health and Environment. TG Betz, MD, State Epidemiologist, Texas Dept of Health. MH Wilder, MD, State Epidemiologist, Florida Dept of Health and

Blood Cell Transfusion — Continued

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Editorial Note: Bacteremia is a rare complication of blood transfusion but should be considered in any severe unexplained transfusion reaction. The incidence of *Y. enterocolitica* bacteremia associated with blood transfusion is unknown. However, before 1987, only six cases had been reported in the world literature, and only one of these occurred in the United States (*1–6*). In vitro studies have shown that after a lag period of 2–3 weeks, small inocula (<1 CFU/mL) of *Y. enterocolitica* can proliferate to high titers (>10^8 CFU/mL) and produce large amounts of endotoxin in RBCs stored at 4 C without hemolysis or other visible changes in the RBCs (CDC, unpublished data). No information on *Y. enterocolitica* serostatus in blood donors is available.

If transfusion-associated sepsis is suspected, both the recipient's blood and the residual blood in the transfusion bag should be cultured. The blood bag, administration tubing, and any bacterial isolates from the recipient and the blood should be saved until the investigation is complete. So that the frequency of transfusion-associated *Y. enterocolitica* sepsis can be estimated, physicians are requested to report cases through state health departments to the Epidemiology Branch, Hospital Infections Program, Center for Infectious Diseases, CDC; telephone: (404) 639-3406.

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Perspectives in Disease Prevention and Health Promotion

Progress Toward Achieving the National 1990 Objectives for Fluoridation and Dental Health

Of the 1990 health objectives for the nation (*1*), 12 pertain to fluoridation and dental health. At the time of the Mid-Course Review (*2*), two of the objectives had been achieved, four are probably attainable, three appear unlikely to be attained, and data are insufficient to evaluate progress for the remaining three objectives.

HEALTH STATUS

By 1990, the proportion of 9-year-old children who have experienced dental caries in their permanent teeth should be decreased to 60%.

This objective has been achieved. The proportion of 9-year-olds who had had dental caries in their permanent teeth was 49% in 1979–80, compared with 71% in

1990 Objectives — Continued

1971–1973 (*3,4*). Preliminary results from a 1986–87 national survey of U.S. schoolchildren indicate that more than 65% of 9-year-olds were caries-free in the permanent teeth (*5*). These data show that the downward trend in the prevalence of caries in the general schoolchild population is continuing.

Although the overall prevalence of dental caries is declining in U.S. children, the prevalence and severity of dental caries vary according to age, geographic location, socioeconomic status, and race. State and community surveys of children have identified differences between national findings and findings of certain targeted populations. For example, in South Carolina (1982–83), approximately 70% of 9-year-old black children had had dental caries in the permanent teeth (*6*). Native American children also had much higher rates of dental caries than the general population (Indian Health Service, Native American Oral Health Survey, unpublished data, 1983–84).

Preventive and restorative care programs must remain a priority for high-risk populations, and the promotion of fluorides and sealants should continue in order to maintain the caries decline.

By 1990, the prevalence of gingivitis in children 6–17 years should be decreased to 18%.

National data are insufficient to assess progress toward this objective. A national survey of schoolchildren, conducted in 1986–87 by the National Institute of Dental Research (NIDR), included an assessment of gingival bleeding and destructive periodontal disease in children aged 13–17 years. Results from this survey, expected in 1988, will allow further assessment of progress toward meeting this objective.

By 1990, in adults the prevalence of gingivitis and destructive periodontal disease should be decreased to 20% and 21%, respectively.

This objective has been met partially for adults experiencing destructive periodontal disease. Because of recent modifications in the assessment of gingivitis, however, progress in gingivitis prevalence is difficult to assess.

From the 1985–86 National Oral Health Survey of Adults and Seniors conducted by NIDR, only 14% of employed adults (18–64 years of age) had periodontal pockets, and <10% had severe periodontal disease. Although <25% of adults ≥65 years of age had periodontal pockets, at least one third of dentulous seniors appeared to be at risk for significant levels of periodontal disease.

Many adults can maintain an acceptable level of periodontal health over a lifetime through a combination of personal and professional care. Public and private care programs should target the elderly and other persons at high risk for periodontal disease.

REDUCTION OF RISK

By 1990, no public elementary or secondary school (and no medical facility) should offer highly cariogenic foods or snacks in vending machines or in school breakfast or lunch programs.

Data are insufficient to assess progress toward this objective, but it seems unlikely that the objective will be attained by 1990. Several factors operate to impede the achievement of this objective. For example, sugared snacks are often a major source of revenue for schools, e.g., bake sales and candy sales. The U.S. Department of Agriculture recently ruled that the presence of a federally supported school food program cannot prevent the sale of snack foods on school premises except during

1990 Objectives — Continued

mealtimes. Other important impediments include the inability to quantify the relative cariogenicity of foods and the lack of convenient food alternatives to sugary snacks.

By 1990, virtually all students in secondary schools and colleges who participate in organized contact sports should routinely wear proper mouth guards.

Based on data from private and public organizations, this objective is unlikely to be achieved. No national surveillance program exists for monitoring the use of protective mouthpieces by participants in contact sports; however, several national sports organizations have mandatory requirements for the use of protective mouthpieces at the secondary school and collegiate levels. Data provided from the National Collegiate Athletic Association (NCAA) indicate that a substantial proportion of injuries sustained by college athletes occur in the cranial/facial region of the body. However, only three NCAA sports—football, ice hockey, and men's lacrosse—require the use of mouth guards.

Current strategies for increasing routine mouth-guard use rely almost exclusively on the interest and involvement of physicians and dentists working with athletes' associations and teams. National strategies need to be broadened in scope to include organized contact sports at all levels, to encourage compliance with existing rules, and to monitor the incidence and severity of facial and oral injuries.

PUBLIC AWARENESS

By 1990, at least 95% of schoolchildren and their parents should be able to identify the principal risk factors related to dental diseases and be aware of the importance of fluoridation and other measures in controlling these diseases.

Based on findings from the 1985 and 1986 National Health Interview Survey (NHIS), progress has been achieved toward this objective. Data from the 1986 NHIS indicated that 65% of respondents knew that the purpose of fluoridation was to improve dental health (National Center for Health Statistics [NCHS], 1986 NHIS—Dental Supplement, unpublished data, 1986). A 1977 Gallup poll indicated that 45% of respondents knew the importance of fluoridation; the 1985 NHIS indicated, however, that the public incorrectly ranks oral hygiene and professional care ahead of fluoride as "definitely important" in preventing tooth decay (*6*). Thus, continued oral health promotion activities by public health agencies and professional organizations are needed to disseminate accurate dental health messages. Oral health education and promotion efforts should not be limited to children but should extend to all age groups.

By 1990, at least 75% of adults should be aware of the necessity for both thorough personal oral hygiene and regular professional care in the prevention and control of periodontal disease.

This objective has been achieved. Information from the 1983 and 1985 NHIS indicated that most surveyed adults recognized that regular dental visits and personal oral hygiene are important measures to prevent and control periodontal disease (*7*; NCHS, 1983 NHIS—Dental Supplement, unpublished data, 1984).

Although the public apparently recognizes the most important measures to prevent periodontal disease, it may not be able to differentiate between specific risk factors related to periodontal disease and those related to tooth decay. Consequently, the dental profession and dental product manufacturers need to provide health education messages that more clearly distinguish between actions appropriate for preventing periodontal disease and those required to prevent tooth decay. In

1990 Objectives — Continued

addition, the importance of regular professional care for the edentulous (toothless) needs to be emphasized.

SERVICES

By 1990, at least 95% of the population on community water systems should be receiving the benefits of optimally fluoridated water.

This objective is not likely to be achieved by 1990. In 1985, an estimated 61.9% of the U.S. population using public water systems had access to drinking water with fluoride levels capable of preventing dental caries (≥0.7 ppm), representing 54.5% of the total U.S. population.

The slow but steady growth rate of community water fluoridation over the past 40 years has averaged 1%–2% per year, adding 1–3 million persons each year to the population benefiting from fluoridated water. Recently, the number of new persons being added to fluoridated systems has begun to level off. Opposition to fluoridation activity remains strong and focuses on efforts within local and state legislatures.

Given its high degree of effectiveness and efficiency in preventing decay, community water fluoridation should be the foundation for improving oral health in the United States. Efforts should be concentrated on fluoridating systems serving at least 1000 persons. The national strategy for fluoridation requires action at all levels of government and community. Federal training and technical assistance, information dissemination, and surveillance should be maintained. In addition, further biomedical and health services research is needed on total dietary fluoride intake, health benefits, safety, and costs.

By 1990, at least 50% of schoolchildren living in fluoride-deficient areas that do not have community water systems should be served by an optimally fluoridated school water supply.

Data are insufficient to assess progress toward this objective. The population of children living in fluoride-deficient areas that potentially could be served by school water fluoridation is unknown.

Over the past several years, the number of schools with fluoridated water systems has declined. A major reason for this decline is the regionalization of public water systems resulting in the incorporation of schools formerly on independent water supplies. School water fluoridation probably will never make a major contribution to the overall fluoridation effort. Perhaps the most efficient means of reaching the most children not currently served by fluoridated water is the continued promotion of fluoridation of public water supplies.

By 1990, at least 65% of schoolchildren should be proficient in personal oral hygiene practices and should be receiving other needed preventive dental services in addition to fluoridation.

Progress toward improving the proficiency in personal oral hygiene of children is unknown; however, progress has been made in the provision of necessary preventive dental services.

Data from the 1986 NHIS indicated that 95% of children 5–17 years of age reportedly have used a fluoridated dentifrice, and 14% reportedly have used fluoride mouthrinses at home. Parents of 5.5 million children aged 2–16 years reported that their children participate in school-based fluoride mouthrinse programs, often established in schools where a large proportion of the students do not have access to fluoridated water. Only 13% of children aged 2–8 years reportedly have used dietary fluoride supplements as an alternative to water fluoridation.

1990 Objectives — Continued

Data from the 1986 NHIS show that 11% of children aged 7–8 years have dental sealants and that black and low-income children are less likely to have sealants than white and higher-income children.

Appropriate preventive dental services should continue to be promoted, particularly dental sealants for all children and fluoride mouthrinses and supplements for targeted high-risk groups.

SURVEILLANCE

By 1990, a comprehensive and integrated system should be in place for periodic determination of the oral health status, dental treatment needs, and utilization of dental services (including reasons for and costs of dental visits) of the U.S. population.

This objective is attainable as progress has been made in expanding the information base for a comprehensive and integrated system.

Numerous oral health surveys conducted by federal, state, and private agencies and organizations monitor oral health status, treatment needs, care utilization, and costs. Surveys have been and continue to be conducted by NCHS, NIDR, the Health Resources and Services Administration, the Indian Health Service, the U.S. Department of Defense, and numerous states and local communities.

Continuing efforts at the federal level are needed to coordinate information from these surveys. Future efforts should be directed toward expanding the use of computer technology for data acquisition, more sophisticated data processing, better understanding of self-reported response information, and the development of linkages between the various datasets.

By 1985, systems should be in place for determining coverage of all major dental public health preventive measures and activities to reduce consumption of highly cariogenic foods.

Progress has been made toward achieving this objective. Specific national reporting systems and surveys provide public health programs with an indication of the extent of preventive dental activities. Based on recommendations of the Mid-Course Review (*2*), the focus on reduction of cariogenic foods has been deemphasized because of the complexity of involved issues and the difficulty in quantifying the cariogenicity of foods.

Reported by: Dental Disease Prevention Activity, Center for Prevention Svcs, CDC.

Editorial Note: Overall, the progress made toward achieving the 12 national 1990 objectives in the areas of fluoridation and dental health has been positive and encouraging, and these trends are reflected in improvements in the nation's oral health. Information obtained from the Mid-Course Review will be invaluable in setting objectives for the year 2000.

The downward trend in dental caries in U.S. schoolchildren has been occurring over the past 2 decades. The decline has occurred in all age groups and all regions of the country. However, dental caries remains an important problem for certain high-risk populations. Persons who live in nonfluoridated communities and who do not receive routine dental care may have an increased risk of dental decay, e.g., decay rates in American Indians and migrant populations are significantly higher than the rate in the general population. In addition, black children and children of lower socioeconomic status tend to have more dental disease and more untreated decay and to receive fewer dental services.

1990 Objectives — Continued

Although the incidence of dental caries usually peaks during childhood and adolescence, the long-term sequelae of dental decay lasts a lifetime. Teeth that are restored will generally require additional care in later years as restorations wear out or fracture or as recurrent caries activity occurs. Persons with dry mouth (xerostomia) resulting from disease, medication, radiation therapy, or aging are highly susceptible to dental decay. The recession of gingival tissue, resulting from periodontal disease, abrasion, or aging, exposes root surfaces that are also susceptible to decay. Thus the decline in childhood dental caries should be viewed with cautious optimism as an encouraging trend, not as an indication that the need for oral health care has diminished.

Because dental decay has been almost universally prevalent, it has been viewed by many as inevitable. However, the continued decline in caries rates provides strong evidence that dental disease is a preventable condition.

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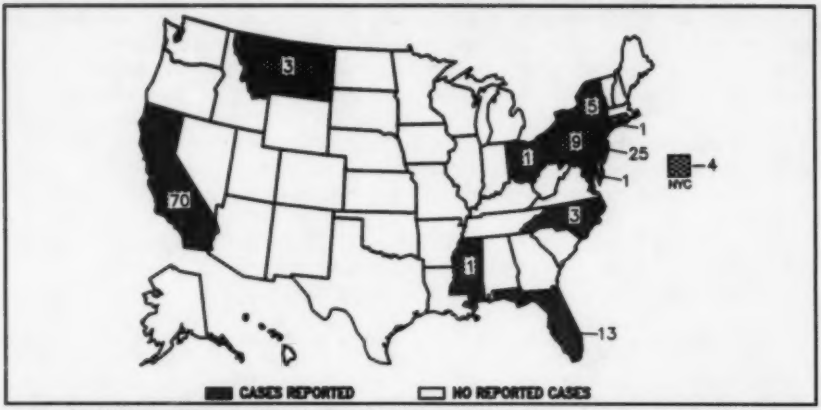
FIGURE I. Reported measles cases — United States, Weeks 33–36, 1988



The *Morbidity and Mortality Weekly Report* is prepared by the Centers for Disease Control, Atlanta, Georgia, and available on a paid subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, (202) 783-3238.

The data in this report are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday. The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Such reports and any other matters pertaining to editorial or other textual considerations should be addressed to: Editor, *Morbidity and Mortality Weekly Report*, Centers for Disease Control, Atlanta, Georgia 30333.

☆U.S. Government Printing Office: 1988-530-111/81527 Region IV

HHS Publication No. (CDC) 88-8017